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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,884	08/10/2004	Akihiro Mano	22040-00034-US1	4883
30678	7590	07/25/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP SUITE 800 1990 M STREET NW WASHINGTON, DC 20036-3425			EDMONDSON, LYNNE RENEE	
			ART UNIT	PAPER NUMBER
			1725	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/710,884

Applicant(s)

MANO ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-8, 10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 7, 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no disclosure of inducing liquefied solder on the back surface to the side surface and simultaneously soldering the side surface portion and back surface portion. Appropriate correction is required..

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Meyer et al. (EP 0964608 A2).

Meyer teaches an electronic device comprising solder on a contact on a circuit substrate having a metal terminal (26) on the back surface. It is noted that an identical

structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls. The part is soldered by printing a cream solder on a land on a circuit substrate, mounting a semiconductor part so that only a back surface is in contact with the solder and soldering with a laser beam by irradiating only a side surface of the terminal (abstract, figure 3, paragraphs 11-13 and 17).

5. Claims 1, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueno (USPN 6441339 B1).

Ueno teaches an electronic device comprising solder on a contact on a circuit substrate having a metal terminal (1a,4) on the back surface. It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls. The part is soldered by printing a cream solder on a land on a circuit substrate, mounting a semiconductor part so that only a back surface is in contact with the solder and soldering with a laser beam by irradiating only a side surface of the terminal (figures 1b, 1d, 9b, 10b, col 3 lines 5-38, 5 lines 6-40 and col 8 lines 50-65).

6. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Dittman et al. (USPN 5763854).

Dittman teaches an electronic device comprising solder on a contact on a circuit substrate having a metal terminal on the back surface. It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls.

7. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Takanashi et al. (USPN 5842627).

Takanashi teaches an electronic device comprising solder on a contact on a circuit substrate having a metal terminal (52) on the back surface. It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1, 4 and 6 have been considered but are moot in view of the new ground(s) of rejection.

9. Regarding applicant's argument that Dittman does not teach a soldered device on the rear of a substrate see figure 3 There is nothing new in the article.

10. Therefore the 102 rejection of claim 4 as anticipated by Dittman stands.

11. Regarding applicant's argument that Takanashi does not teach a soldered device on the rear of a substrate see figure 3 There is nothing new in the article.

12. Therefore the 102 rejection of claim 4 as anticipated by Takanashi stands.

***Allowable Subject Matter***

13. Claims 2, 3, 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sinkunas (USPN 6168070 B1, side laser), Sinkunas et al. (USPN 6833526 B2, side laser), Topp et al. (USPN 7069653, rear terminal, side laser, semiconductor structure), Bauer et al. (DE 3834147 A1), Izumi et al. (USPN 5289966) and Hayakawa et al. (USPN 4788403).

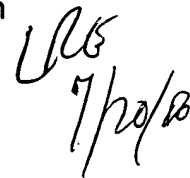
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

Handwritten signature of Lynne Edmondson, dated 7/20/12.

LRE